

Drainage Records and Conservation Status Evaluations for Thirteen Kentucky Fishes

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ABSTRACT.— Recent ichthyofaunal surveys in Kentucky have resulted in drainage records, refinement of distributional patterns, and evaluation of conservation status for 13 fish species. The following species are recorded for the first time from the Kentucky drainages indicated in parentheses: *Lampetra appendix* (Cumberland River), *Umbra limi* (West Fork Clarks River), *Hybognathus hayi* (Tennessee River), *Hybopsis insignis* (Red River), *Notropis ariommus* (Kinniconick Creek), *Notropis telescopus* (Green River), *Lepomis marginatus* (Tennessee River), *Etheostoma camurum* (Licking River), *Percina phoxocephala* (Red River), and *Percina shumardi* (Little Sandy River). In addition, the continued existence of *Percina macrocephala* in the Barren River system and Kinniconick Creek, and of *Fundulus chrysotus* in extreme southwestern Kentucky, are confirmed. Evaluation of recently acquired distributional data necessitates recommended changes in the conservation status (established by the Kentucky Academy of Science) of four species: (1) *Lepisosteus oculatus* should be removed from the threatened category and reassigned to special concern status; (2) *Hybopsis insignis* and *Fundulus chrysotus* should be elevated from special concern to threatened and endangered status, respectively; and (3) *Percina phoxocephala* does not warrant conservation status recognition.

INTRODUCTION

The freshwater ichthyofauna of Kentucky is one of the most speciose in North America, ranking third behind Tennessee and Alabama (Burr 1980). Nevertheless, attempts to thoroughly document the distribution and conservation status of this fauna have only recently been realized through publication of Clay's (1975) book on Kentucky fishes, an updated distributional checklist (Burr 1980), and a list of endangered and threatened Kentucky fishes endorsed by the Kentucky Academy of Science (Branson et al. 1981b). These efforts stimulated renewed interest in the Kentucky fish fauna, with emphasis on taxonomic status, refinement of distributions, and re-evaluation of conservation status as exemplified by Starnes and Starnes (1978, 1979), Bauer and Branson (1979), Burr and Mayden (1979), Burr et al. (1980), Starnes (1981), Warren (1981), Page and Burr (1982), Warren and Cicerello (1982), and others.

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Recent ichthyofaunal surveys conducted under the auspices of the Kentucky Nature Preserves Commission have further contributed to the refinement of distributional patterns and evaluation of the Kentucky Academy of Science conservation status (Branson et al. 1981b) of several fish species. It is the primary purpose of this report to elucidate and summarize these findings for a better understanding of Kentucky's speciose ichthyofauna.

SPECIES ACCOUNTS

Several new drainage records, significant distributional information, and conservation status evaluations for 13 Kentucky fishes are presented in the following species accounts. Each account includes collection numbers followed in parentheses by the number of specimens, standard or total length (TL) range in millimeters, stream and major drainage, locality, county, and date of collection. All scientific and common names follow Robins et al. (1980). Collecting materials and methods were the same as those presented by Harker et al. (1980). All collections are housed at the Kentucky Nature Preserves Commission (KNP), pending deposition at Southern Illinois University at Carbondale (SIUC). A number of specimens, as noted, are deposited at the Kentucky Department of Fish and Wildlife Resources (KFW), the Kentucky Department of Transportation (KDOT), or SIUC.

Lampetra appendix (DeKay). American brook lamprey. KNP uncat. (1, 182 TL), Cumberland R. (Ohio R. dr.), 30 m below the mouth of Sulphur Cr., Monroe Co., 22 October 1982.

Burr (1980) considered *Lampetra appendix* (as *L. lamottei*) to be occasional in the upper Barren, Green, Kentucky, and Big Sandy rivers of Kentucky. The specimen reported here is the first published record for the Cumberland River of Kentucky, and one of three from the entire drainage (Rohde 1980). Based on development of dentition, eyes, and fins, the specimen was judged a sub-adult in the latter stages of transformation; myomeres numbered approximately 69-70. Seagle and Nagel (1982) noted that metamorphosis of this species in streams of eastern Tennessee occurred from mid-August through October; this is supported by capture of a metamorphosing specimen in Kentucky in late October. The specimen was collected from shallow (15 cm), clear water with moderate current over a gravel riffle near the shore. When collected the specimen was sluggish, relatively easy to capture, and hemorrhaging at the base of the dorsal fins. It should be noted that the Cumberland River was at unusually low flow and high water temperatures due to temporary curtailment of hypolimnetic discharge from upstream Wolf Creek Dam. Extensive seining in the area produced only a few specimens of *Cottus carolinae* (Gill) and a single juvenile *Etheostoma*

rufilineatum (Cope). We speculate that the lamprey was a waif from nearby Sulphur Creek, which more closely approximates the preferred small river and stream habitat (Rohde 1980). *Lampetra appendix* is regarded as a species of special concern in Kentucky (Branson et al. 1981b).

Lepisosteus oculatus (Winchell). Spotted gar. KNP Tn04GRV (1, 464 TL; 1 not retained), unnamed wetland (W. Fk. Clarks R. dr.), 0.9 km ENE Clear Springs, Graves Co., 4 May 1982; KNP O01 MCC (1,380 TL; 1 not retained), Metropolis Lake (Ohio R. dr.), 2.3 km N KY 1420 and KY 996 jct, McCracken Co., 6 June 1982; KNP M02CAE (1, 603 TL), Fish Lake (Mississippi R. dr.), at Burkley, Carlisle Co., 20 June 1982; KNP M05HIC (1, 557 TL; 1 not retained), Obion Cr. (Mississippi R. dr.), 0.1 km downstream from KY 307 crossing, Hickman Co., 22 June 1982.

In Kentucky, the spotted gar was thought to be restricted to the mainstem and tributaries of the Mississippi, lower Ohio (exclusive of the lower Tennessee and Clarks rivers), and lower Cumberland rivers (Burr 1980), until specimens from the Tradewater and Green river drainages were reported by Warren and Cicerello (1982). More recently, Rice et al. (1983) published the first substantiated Kentucky record for *L. oculatus* from the lower Tennessee River drainage and, in addition, six records for localities in Carlisle, Fulton, and Hickman counties. In light of these records and those presented herein, we believe a reappraisal of the threatened status assigned to *L. oculatus* by Branson et al. (1981b) is warranted. The spotted gar is more widespread in Kentucky than previously thought despite the continuing loss of wetland habitat favored by the species (Trautman 1981; Warren and Cicerello 1982).

The apparent rarity of the species is probably a result of the difficulty of sampling the preferred vegetated, wetland habitat which has only recently begun to be surveyed in Kentucky. We recommend that the status of *L. oculatus* be changed from threatened to special concern, so that the impact of habitat modification can be monitored.

Umbra limi (Kirtland). Central mudminnow. KNP M02GRV (1, 74), unnamed wetland (Terrapin Cr. dr.), 1.45 km S KY 97 and KY 1485 jct at Bell City, Graves Co., 27 April 1982; KNP Tn03GRV (1, 64), old channel (W. Fk. Clarks R. dr.), at KY 131 crossing, Graves Co., 4 May 1982; KNP Tn04GRV (2, 46-53), unnamed wetland (W. Fk. Clarks R. dr.), 0.9 km ENE Clear Springs, Graves Co., 4 May 1982; KNP Tn08GRV (4, 18-21), unnamed wetland (W. Fk. Clarks R. dr.), 1.1 km SSW mouth Spring Cr., Graves Co., 5 May 1982; KNP M04FUL (4, 40-66), unnamed wetland (Reelfoot Lake dr.), 0.4 km NE Tyler on E side KY 94, Fulton Co., 24 June 1982; KDOT Q18 (2, -), slough along KY 94 (Reelfoot Lake dr.), NW of KY 94 and 1500 m NE of Tennessee-

Kentucky line, Fulton Co., 12 June 1979; KDOT Q20 (2, -), tributary to Blue Pond (Reelfoot Lake dr.), KY 311 bridge, Fulton Co., 17 June 1979; KDOT Q27 (-, -), Rittenhouse Slough (Reelfoot Lake dr.), 1700 m S Bondurant, Fulton Co., 24 August 1978; KDOT Q32 (2, -), unnamed trib. Running Slough (Reelfoot Lake dr.), N Illinois Central Railroad and 170 m SE Ledford, Fulton Co., 22 August 1978.

This species was previously known from only three Kentucky localities (Sisk 1978; Burr 1980). Burr (1980) regarded it as rare and Branson et al. (1981b) listed it as threatened. *Umbra limi* is apparently firmly established in Terrapin Creek (Brooks M. Burr, pers. comm.) and the Reelfoot Lake drainage of extreme southwestern Fulton County, Kentucky, and is sporadically distributed in Clarks River, being most prevalent in the West Fork. Although the populations in Clarks River represent the only published localities of the species in the Tennessee River drainage, *U. limi* has also been collected in the Big Sandy River of Tennessee (David A. Etnier, pers. comm.). These populations are near the southern periphery of the range (Gilbert 1980a). The apparent absence of the fish in streams of western Kentucky draining directly into the Mississippi River (e.g., Bayou du Chien, Obion and Mayfield creeks) is zoogeographically puzzling; however, further intensive sampling of wetland habitats in these drainages will probably reveal its presence. The future existence of *U. limi* in Terrapin Creek (Obion R. dr.) and West Fork Clarks River may be jeopardized by drainage of remaining wetlands as witnessed at two of our collection sites (i.e., KNP M02GRV, KNP Tn04GRV). Likewise, rapid erosion of the Mississippi loess bluffs and expansion of agriculture in the floodplain threaten this and other species inhabiting the Reelfoot Lake drainage in both Tennessee (Starnes and Etnier 1980) and Kentucky.

Hybognathus hayi Jordan. Cypress minnow. KNP Tn04GRV (1, 74), unnamed wetland (W. Fk. Clarks R. dr.), 0.9 km ENE Clear Springs, Graves Co., 4 May 1982.

Recent works addressing the distribution of *H. hayi* in Kentucky have revealed records for direct Mississippi and Ohio river tributaries and floodplain lakes in the extreme western part of the state (Burr et al. 1980) and a relictual population in lower Green River (Warren and Cicerello 1982). The discovery of the species in the West Fork Clarks River system represents the first record for the Tennessee River drainage in Kentucky, although records are available for the drainage in Tennessee (David A. Etnier, pers. comm.) and Alabama (Gilbert 1980b). The specimen was secured from a shallow (<0.6 m) pothole in a recently cleared and drained wetland. *Hybognathus hayi* is considered threatened in Kentucky (Branson et al. 1981b) and in consideration of the elimination and destruction of the preferred wetland habitat by oil

exploration and coal mining (Warren and Cicerello 1982), channelization (Burr et al. 1980), and drainage as witnessed herein, the future of the species in Kentucky is increasingly tenuous.

Hybopsis insignis Hubbs and Crowe. Blotched chub. KNP C04LOG (1, 89), S. Fk. (Red R. dr.), 1.7 km NE Smith Grove Church, Logan Co., 13 July 1982; KNP C05LOG (15, 47-79), Red R. (Cumberland R. dr.), at Dot, Logan Co., 13 July 1982.

In Kentucky, *H. insignis* was known to persist only in the Little South Fork Cumberland River of southeastern Kentucky (Harker et al. 1979) and was formerly known to occur in the mainstem of Cumberland River (Harris 1980) and the lower Tennessee River (Hubbs and Crowe 1956) before impoundment. In the Cumberland River drainage of Tennessee, the species is known from four localities (Harris 1980). The discovery of a substantial population in the Red River represents a new record for that drainage in Kentucky and adds hope for the continued existence of the species in the state. Branson et al. (1981b) considered the species of special concern in Kentucky. In light of strip-mine and oil field related water pollution in Little South Fork (Harker et al. 1979, 1980) and heavy siltation and pesticide pollution in Red River (pers. observ.) the species should be considered at least threatened within Kentucky.

Notropis ariommus (Cope). Popeye shiner. KFW uncat. (2, 45), Kinniconick Cr. (Ohio R. dr.), near mouth Pipe Lick Cr., Lewis Co., 7 May 1981; KFW uncat. (3, 45-48), Kinniconick Cr. (Ohio R. dr.), downstream Laurel Fk. mouth, Lewis Co., 7 May 1981.

The distribution of the popeye shiner in Kentucky was previously defined as the upper Cumberland, Green, Barren, Rolling Fork, and Kentucky river drainages (Gilbert 1969, 1980c; Burr 1980). Despite this rather wide distribution, the popeye shiner is sporadic in occurrence and seldom common and was thus listed as of undetermined status in Kentucky (Branson et al. 1981b). In middle and upper Ohio River tributaries other than those aforementioned, *N. ariommus* is known from six widely separated populations in Indiana, Pennsylvania, and West Virginia (Gilbert 1969, 1980c). Several of these represent old records for populations apparently extirpated (Gilbert 1969). The collections reported herein are a significant eastward range extension in the Ohio River valley of Kentucky and also close the hiatus between the widely separated middle and upper Ohio River populations. It is increasingly apparent from data presented by Gilbert (1969, 1980c) and that of this report that *N. ariommus* once occupied much of the Ohio River valley, but is now extirpated or reduced in the northern and upper regions of the valley to widely disjunct, sporadically distributed localities. Kinniconick Creek is a high quality stream with a predominantly forested

watershed that has fortuitously escaped degradation from development. However, proposed plans to develop extensive Devonian age oil shale deposits in the watershed (Harker et al. 1980) may alter these conditions and threaten the future existence of *N. ariommus* in the drainage.

Notropis telescopus (Cope). Telescope shiner. KNP uncat. (1, 47), E. Fk. (Barren R. dr.), at mouth of Isenburg Cr., Monroe Co., 12 June 1979; SIUC 3931 (17, 39-57), E. Fk. (Barren R. dr.), at KY 63 crossing, Monroe Co., 24 September 1981.

Notropis telescopus was known in Kentucky only from the Cumberland River (below the Falls) in the southeastern part of the state (Burr 1980) where it is common to abundant in small to medium-sized, high quality streams and rivers. Collection of the telescope shiner in East Fork Barren River represents the first substantiated report of the species from the Green River system. Woolman (1892) noted the species as rare in the Little Barren River; however, Gilbert (1969) regarded the record as erroneous; the specimen(s) was apparently not available for examination. These records are of particular interest because several other taxa typical of the Cumberland River of Kentucky and Tennessee, such as *Nocomis effusus* Lachner and Jenkins, *Notropis leuciodus* (Cope), *Fundulus catenatus* (Storer), and closely related members of the subgenera *Catonotus*, *Nanostoma*, and *Nothonotus* of the genus *Etheostoma*, are also represented in the ichthyofauna of the Barren and Green rivers. Furthermore, Lachner and Jenkins (1971) and Zorach (1972) cited evidence that stream capture has been responsible for ichthyofaunal exchange between the Cumberland and Green rivers. The ichthyofauna of the upper Barren and Green rivers is relatively well known (Burr 1980), and the failure of workers subsequent to Woolman to capture *N. telescopus* in the drainage presents an enigma in interpreting its native or non-native status. Since Woolman was apparently quite familiar with *N. telescopus* and differentiated it from the similar *N. ariommus* (Cope), the likelihood of misidentification of the Little Barren River specimen(s) is reduced. Also of interest is the fact that both East Fork Barren River and Little Barren River headwaters lie in close proximity to Cumberland River streams (Meshack and Marrowbone creeks, respectively) which harbor large populations of *N. telescopus* (pers. observ.). The possibility of headwater capture is heightened, especially along the Meshack Creek-East Fork Barren River divide, by the presence of karst development including numerous sinkholes and subterranean drainage. This is best illustrated on the southeast corner of the U. S. Geological Survey 7.5 minute Sulphur Lick quadrangle map (Harris 1964). The current extent of dispersal of *N. telescopus* in the Barren River is unknown, but the capture of the species only in East Fork implies a localized distribution. Based on the available evidence, the origin of *N. telescopus* in the Green River is unclear; however, as noted

by Jenkins et al. (1971) even the most suggestive evidence concerning stream capture may lead to invalid conclusions, and limited distributions may result from introduction rather than natural factors. Further collecting aimed at probable theatres of stream capture should further elucidate the native or non-native status of *N. telescopus* as well as relationships among other shared taxa.

Fundulus chrysotus (Günther). Golden topminnow. KNP M03FUL (9, 42-51), Running Slough (Reelfoot Lake dr.), at Ledford, Fulton Co., 24 June 1982.

According to Burr (1980), the golden topminnow was known in Kentucky only from Open Pond, Fulton County, where two collections were made by Sisk (1973). Field observations made during the summer of 1982 revealed that Open Pond and surrounding wetlands had been drained, cleared, and converted to agricultural land. Recent collecting efforts in appropriate habitat throughout the general drainage area in Kentucky revealed that the golden topminnow is now known from a single extant population in Running Slough. Although *F. chrysotus* is listed as of special concern in Kentucky by the Kentucky Academy of Science (Branson et al. 1981b), the species should be placed in the endangered category in light of its extremely limited distribution in Tennessee (Starnes and Etnier 1980) and the potential for rapid loss of habitat as witnessed for Open Pond.

Lepomis marginatus (Holbrook). Dollar sunfish. KNP Tn04GRV (1, 49), unnamed wetland (W. Fk. Clarks R. dr.), 0.9 km ENE Clear Springs, Graves Co., 4 May 1982; KNP Tn08GRV (1, 72), unnamed wetland (W. Fk. Clarks R. dr.), 1.1 km SSW mouth Spring Cr., Graves Co., 5 May 1982.

Lepomis marginatus, previously known from only two Kentucky localities, neither of them in the Tennessee River drainage (Burr 1980), was discovered by Rice et al. (1983) at a third site in West Fork Clarks River. These records represent an addition to the ichthyofauna of the Tennessee River in Kentucky. The species is apparently widely distributed in West Fork Clarks River and at some localities occurs in good numbers (Rice et al. 1983). The populations in West Fork, although threatened by wetland drainage as witnessed by the authors (e.g., at KNP Tn04GRV), may prove to be critical in preserving the species as a viable member of the native Kentucky ichthyofauna. Branson et al. (1981b) listed the species as threatened.

Etheostoma camurum (Cope). Bluebreast darter. KNP L01BAT (26, 34-54), Licking River (Ohio R. dr.), at mouth Slate Cr., Bath Co., 16 September 1982.

Etheostoma camurum was previously known in Kentucky from the upper Cumberland (below the Falls) and upper Kentucky river drainages (Burr 1980; Zorach 1972). The collection reported herein represents

an addition to the ichthyofauna of the speciose Licking River system and reduces the distributional hiatus among known populations in the upper and middle Ohio River drainage (Zorach 1972). Although previous surveys of the Licking River have not revealed *E. camurum* (Woolman 1892; Welter 1938; Clark 1941a, b; Jones 1970), other members of the subgenus *Nothonotus* (i.e., *E. maculatum* Kirtland and *E. tippecanoe* Jordan and Evermann) have been reported from the drainage (Woolman 1892; Clark 1941a, b; Burr 1980). However, *E. maculatum*, often confused with *E. camurum* (Zorach and Raney 1967), is known in the drainage only from a collection made by J. A. Henshall in South Fork (Woolman 1892). Henshall apparently recognized both species, according to details presented in Trautman (1981), and the *E. maculatum* record is considered valid by some authors (Zorach and Raney 1967; Burr 1980), although Etnier (1980) did not include the Licking River in its distribution. We speculate that *E. camurum* was missed in the Licking River by previous investigators because populations are often localized (Stauffer 1980). Moreover, large stream or river habitat often occupied by members of the subgenus *Nothonotus* is difficult to collect and has elsewhere recently yielded species missed during many years of collecting (Williams and Etnier 1978). Our specimens were collected from a 0.3-0.6 m deep riffle habitat with moderate to swift current. Substrate consisted of bedrock overlain with slab boulder where the current was swiftest, and cobble/gravel in areas of moderate flow. Additional collecting in the poorly sampled mainstem of the Licking and South Fork Licking rivers (Burr 1980) is necessary to determine the extent of distribution of *E. camurum* and to verify the existence of *E. maculatum* in the drainage.

Percina macrocephala (Cope). Longhead darter. KNP uncat. (1, 72), Kinniconick Cr. (Ohio R. dr.), 2.1 km upstream from mouth Pine Br., Lewis Co., 5 May 1981; KNP uncat. (4, 45-52), Kinniconick Cr. (Ohio R. dr.), near mouth Pipe Lick Cr., Lewis Co., 7 May 1981; KNP uncat. (2, 51-75), Kinniconick Cr. (Ohio R. dr.), between Mill and Leatherbelly branches, Lewis Co., 14 May 1981; KNP G01ALL (15, 67-90), Trammel Fk. (Barren R. dr.), at old state rd. ford 1.55 km N of Red Hill, Allen Co., 14 July 1982; KNP G05WAR (6, 36-72), Trammel Fk. (Barren R. dr.), at ford 0.2 km upstream from mouth Drakes Cr., 16 July 1982.

According to Page (1978) and Burr (1980), the longhead darter occurs sporadically in Kentucky in the upper Barren, upper Green, Kentucky, Licking, and Big Sandy river systems and Kinniconick Creek and has apparently been extirpated from the Cumberland River. Burr (1980) noted that the species was once common in the Barren River prior to impoundment of Barren River Reservoir as indicated in pre-

impoundment surveys conducted by the Kentucky Department of Fish and Wildlife Resources. Our collections in Trammel Fork (Barren R. dr.) indicate the species continues to persist in good numbers in tributaries unaffected by impoundment. The only previous collection of *P. macrocephala* in Kinniconick Creek is based on a single specimen collected in the 1930s and housed at the University of Louisville. Our observations indicate that the species is moderately common in appropriate habitat along the Kinniconick Creek mainstem. In spite of these relatively healthy populations in the Barren River drainage and Kinniconick Creek, the conservation status of the species in Kentucky should remain threatened (Branson et al. 1981b) because of pollution and habitat destruction associated with coal mining in the upper Kentucky, Licking, and Big Sandy rivers (Harker et al. 1979), the extirpation of the species from the Cumberland River of Kentucky (Page 1978), and the threat of oil shale development in the Kinniconick Creek drainage (Harker et al. 1981).

Percina phoxocephala (Nelson). Slenderhead darter. KNP C01LOG (1, 49), Whippoorwill Cr. (Red R. dr.), 0.7 km W Millertown Church, Logan Co., 8 July 1982; KNP C03LOG (3, 58-63), S. Fk. (Red R. dr.), Kentucky-Tennessee line, Logan Co., 13 July 1982; KNP C04LOG (5, 65-69), S. Fk. (Red R. dr.), 1.7 km NE Smith Grove Church, Logan Co., 13 July 1982; KNP C05LOG (3, 61-84), Red R. (Cumberland R. dr.), at Dot, Logan Co., 13 July 1982; KNP C02TRI (5, 55-67), Little R. (Cumberland R. dr.), 1.3 km downstream from KY 1253 crossing, Trigg Co., 6 July 1982.

Percina phoxocephala was previously unknown from the Red River of Kentucky and Tennessee (Starnes and Etnier 1980; Thompson 1980), and Burr (1980) noted its former occurrence in the lower Cumberland River. The collections noted herein are new records for the Red River and substantiate the persistence of the species in a lower Cumberland River tributary. In Kentucky, the species was regarded as of special concern (Branson et al. 1981b) and was noted by Burr (1980) as occasional within several drainages. Recent collections made by the authors and fresh material examined by us indicate good populations of *P. phoxocephala* in Tygarts Creek of eastern Kentucky (Warren 1981, and unpublished), and upper and lower Green, Barren, and Rough rivers (Retzer et al. 1983; Warren and Cicerello 1982, and unpublished). The slenderhead darter has been taken by others in recent years from several stations each in Eagle Creek (lower Kentucky River) (Horseman and Branson 1973) and Salt River and tributaries (Hoyt et al. 1979). It therefore appears that retention of the species on the Kentucky Academy of Science list of rare fishes is unwarranted.

Percina shumardi (Girard). River darter. KNP S01GUP (2, 40-44), Little Sandy R. (Ohio R. dr.), 0.5 km W Argillite, Greenup Co., 14 September 1982.

According to Burr (1980), *P. shumardi* is sporadic and uncommon in every major river of the state except the Salt and Big Sandy rivers and the direct Ohio River tributaries in extreme northeastern Kentucky. Collection of the species in the Little Sandy River is a new record for this system and suggests the stream is in need of further study despite recent collections (Harker et al. 1979; Branson et al. 1981a). It further suggests that the species will eventually be taken in adjacent rivers and streams (e.g., Big Sandy River, Kinniconick and Tygarts creeks). The rarity of the species is partially attributable to difficulty in collecting the preferred habitat (Trautman 1981). The specimens reported herein were taken from a deep (1.3 m), swift chute over a substrate of large cobble. Apparently this is the last shoal present on the Little Sandy River before its waters are embayed by the Greenup Lock and Dam on the Ohio River. The river darter is considered threatened in Kentucky (Branson et al. 1981b); however, we believe that further collecting in appropriate habitat will reveal new populations and result in its removal from the state threatened category.

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